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UT.9005.4

FOUR-POSITION FIBER-OPTIC CONNECTOR POLISHER

INSTRUCTION MANUAL

VERSION 02, 02.15.05

TTL Supply, LLC
4674 Martin Trail
Flowery Branch, GA 30542

Ph# 770-967-6557 or
678-947-0168

ULTRA TEC Mfg., Inc.
1025 E. Chestnut Ave., Santa Ana, CA 92701-6425
Tel. 714.542.0608 Fax. 714.542.0627
www.ultratecusa.com

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UT.9005.4
FOUR-POSITION FIBER-OPTIC CONNECTOR POLISHER INSTRUCTION MANUAL

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1025 E. Chestnut Ave.
Santa Ana, Ca 92701-6425
Tel. 714.542.0608
Fax. 714.542.0627
www.ultratecusa.com

For technical questions or help please contact:

Customer Service
Tel. 714.542.0608
Fax. 714.542.0627
E-mail. info@ultratecusa.com

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1.0 MACHINE PARTS DESCRIPTION

1. 1 UT.9005.4
2. 1 Ferrule Protrusion Gauge
4. 5 Resilient Discs
6. 1 Power Supply

2.0 UT.9005.4 MAINTENANCE

1. Clean and wipe dry the internal polishing chamber prior to storage.

2. Clean all platens with lint free tissues soaked in alcohol.

3. Thoroughly clean and dry each connector insert. Do not leave the insert in the UT.9005.4 after use.

The above basic steps should keep your machine operating at optimum performance.

3.0 ELECTRICAL

The unit operates on 12VDC. It comes standard with a 110VAC/12VDC plug-in adapter.

4.0 CAUTION (if using a battery)

Disconnect the power cords to the battery or AC supply when following the adjustments suggested. This removes the risk of falsely starting the unit while fingers are in the polishing chamber.

5.0 CHARGING THE BATTERY (if using a battery)

Initial charging of the battery pack is recommended prior to initial use of the system. To charge the battery, first plug in the battery charger to a 110V outlet and then connect the battery pack to the charger. (If you system has been configured for 220V operation, you must first attach an electrical connector (plug) to the end of the battery charger cable--Due to various outlet configurations in different international locations, this plug is not provided with your unit). Allow the batteries to charge over-night if possible, but at least for a period of 4 hours.

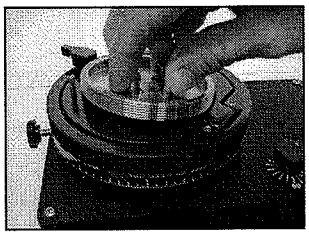
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6.0 TIMER & ELECTRICAL OPERATION

The timer function is set with the knob in the lower right portion of the UT.9005.4. The time period increases with a clockwise rotation of the knob. The push-button above the timer knob will activate the unit for the set time period. Set the time with the Timer Control Knob. Press the start button twice, once to reset; once to start. When the set cycle is finished, select the next time setting. Press the start button twice. (A typical singlemode polish requires 3-4 different time settings. A typical multimode polish requires 2-3 different time settings.)

7.0 CONNECTOR INSERTS

Determine which connector type you will be polishing first and attach the corresponding connector holder to the hinged face assembly.



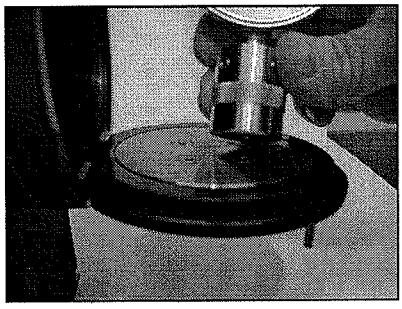
8.0 HEAD ADJUSTMENT

To set the height for optimum performance several steps must be taken:

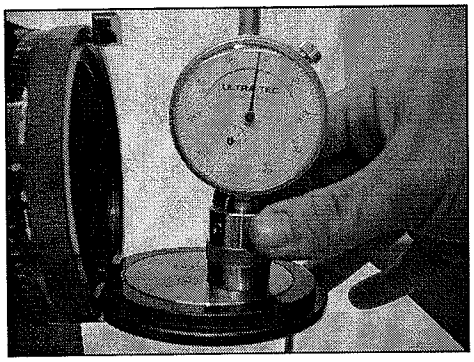
1. Measure the ferrule protrusion of the connector from the underside of the connector holding plate (using the Protrusion Gage).
2. Determine the ferrule protrusion/Calculate the height to be set
3. Set the Head height to zero
4. Turn the Head to the correct height position per the calculation

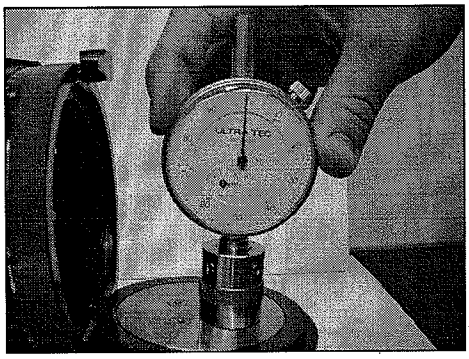
SETTING THE PROTRUSION GAUGE to "0" ZERO

1. Set the Gage to "0" (zero). Place the Gage on the underside of the connector holder lid.



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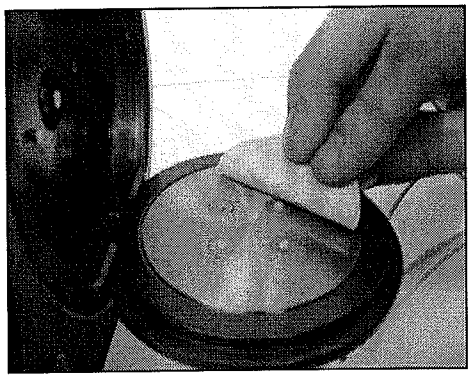


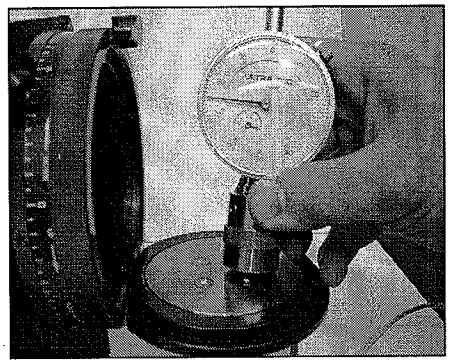


2. Hold the Gage firmly against the lid surface.

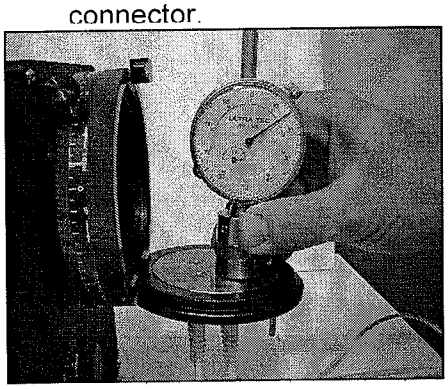
3. Turn the outer ring of the Gage until the indicator is in-line with the number "0" zero. The Gage is now set to "0" zero.

DETERMINING THE FERRULE PROTRUSION

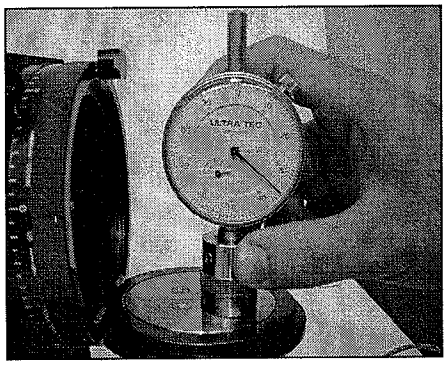




4. Use a piece of 9μm Silicon Carbide to remove the protruding fiber & epoxy from the end face of the connector.



5. Place the Gage over the protruding ferrule. The pin of the Gage should be placed directly over the ferrule.



6. Press down on the Gage until it stops on the underside of the connector holder lid.

7. The Gage will have a reading on it. This is the measurement of ferrule protrusion. We will use this measurement to the set the height.

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CALCULATE THE HEIGHT TO BE SET

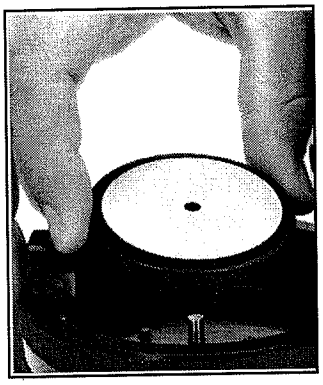
The ideal position of the connectors relative to the Polishing Surface is .010 of indentation into the Resilient Surface Disc. This dimension gives the correct amount of pressure needed to achieve maximum performance--Subtract .010 from the reading. The remainder is the height that needs to be set. The formula is as follows:

X - .010 = The height to be set

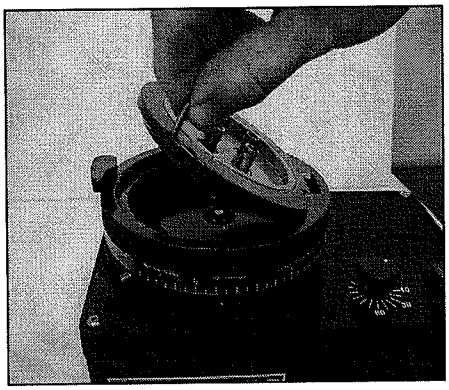
Where X = The ferrule protrusion measured with the Protrusion gauge

For example: If the protrusion was .050, then .050 - .010 = .040

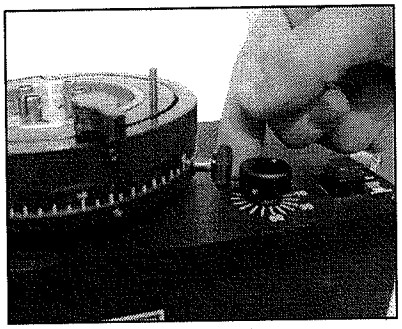
The height that needs to be set is .040



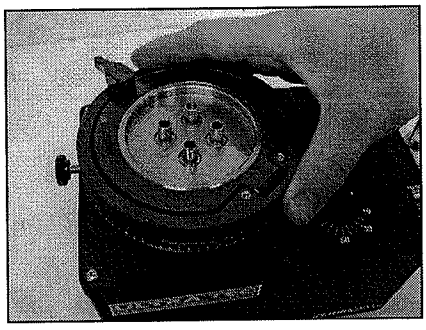
1. Set the height to zero--Place the Resilient Surface Disc into place on the machine. (Polishing Film for the first polishing step should be affixed to the Resilient Surface Disc).



2. Close the lid of the machine.

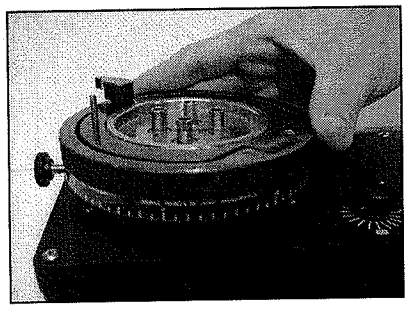


3. Loosen the retention knob. The allen wrench shown above is no longer needed.



4. Turn the Head clock-wise until the connector inserts touch the resilient surface disc--The height is now set to zero.

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5. Set the height accordingly to your height gauge dimension.

   For example: If the reading on the height gage was .050, subtract .010 from .050, the height to be set is .040

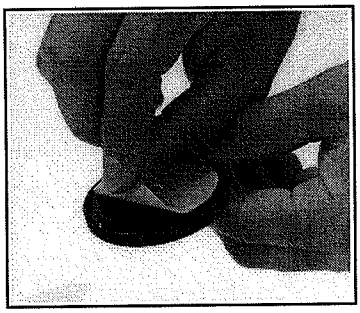
   .050 - .010 = .040

To set the height do the following: For example purposes we will set the height to .040 from the zero setting. A full turn of the Head equals .040, a half turn equals .020, a quarter turn equals .010, etc.. To set the height to .040, turn the Head counter clock-wise one full turn from the "zero" setting. The height is now set to .040 you are ready to polish.

> ***NOTE: The height should only be set for new connector types, or different brands of connectors. If you are only polishing one type and brand of connector you only need to set the height once.***

The height is now set for the connectors you are going to polish. The height should not be changed until a different type or brand of connector is going to be polished.

Attach the appropriate polishing film to the Platen as follows; properly clean the Platen using lint-free tissues soaked with isopropyl alcohol before applying the Polishing Film. Inspect the surface of the film to make sure no debris is present. Affix the film to the Platen's rubber surface (place a few drops of water onto the Resilient Surface Disc). If particles are present beneath the film, remove immediately and clean both the Platen and the film using Isopropyl alcohol. After the film is in place on the Platen thoroughly clean the Polishing Film using a lint-free tissue soaked in alcohol. Wiping in a gentle circular motion from the center out to the edge. It is important that the films are cleaned between each use because debris from a previous polishing step may contaminate the next polishing step. It is recommended that each polishing step has it's own polishing disc dedicated to it.



Warning--Keep your fingers out of the head assembly when the machine is in operation.

<u>CAUTION</u> Do not turn the UT.9005.4 to the ON position while the insert assembly is in an unlocked state. Keep fingers and other body parts clear of the polishing platen while the machine is in operation.

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9.00 THE POLISHING PROCESS (SINGLEMODE)

CLEANING
Cleanliness of the Polishing discs, and Polishing films are critical for optimum performance of the unit.

POLISHING
When initially polishing a new connector, make sure the excess fiber is sanded down to be flush with the epoxy bead.

STEP 1:
Using 9μm Silicon Carbide film, run the machine for 30 seconds, depending upon the size of the epoxy bead. If unsure, run the machine for 5 seconds and repeat if epoxy is not fully removed. This is a dry process; it does not require lubrication on the film. Remove the platen, wipe the ferrule clean and the surrounding area.

STEP 2:
Beginning Polish--Using 6μm Diamond, apply filtered water on the film surface. Gently lower the lid, lock in place and run for30-40 seconds. Remove the platen, wipe the ferrule end clean with isopropyl alcohol.

STEP 3:
Intermediate Polish--Using 3μm Diamond, repeat step 2 but the timer should be set for 30-40 seconds. Repeat the cleaning process.

STEP 4:
Intermediate Polish--Using 1μm Diamond repeat step 3, but set the timer to run 60 seconds.

STEP 5:
Final Polish--Using ULTRAFILM B, apply several drops of the ULTRAPOL B Suspension to the surface of the film in a triangular configuration. Gently lower the lid, lock into place and run for 10-20 seconds. Remove the platen, wipe ferrule end clean and the surrounding area.

STEP 6:
Using a microscope, inspect the face of the optical fiber, make sure there are no scratches, pits, stains, or lint particles on the fiber end-face. Anyone of these can result in a poor reading of the power-meter.

STEP 7:
Install the protective dust cap until the connector is ready for use. Assembly is now ready for final testing with the meter and source.

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The initial steps and cleaning process should be performed with every type of polish that is executed with the UT.9005.4--The remainder of the polishing process are listed below in an easy quick-reference chart.

EASY REFERENCE POLISHING PROCEDURES

THE POLISHING PROCESS FOR SINGLEMODE CONNECTORS (PC)

Step No.	Film Type & Gradation	Cycle Time	Lubrication
1.	9µm Silicon Carbide	30 seconds	Dry
2.	6µm Diamond	30 seconds	Water
2.	3µm Diamond	30 seconds	Water
3.	1µm Diamond	60 seconds	Water
4.	ULTRAFILM B	10-20 seconds	ULTRAPOL B SUSPENSION

THE POLISHING PROCESS MULTIMODE

Step No.	Film Type & Gradation	Cycle Time	Lubrication
1.	5µm Silicon Carbide	30 seconds	Hard Surface Disc/Dry
2.	1µm Diamond	60 seconds	Water
3.	ULTRAFILM B	30 seconds	ULTRAPOL B SUSPENSION

ULTRA TEC Mfg., Inc. 1025 E. Chestnut Ave., Santa Ana CA 92701-6425
TEL. +1 714 542 0608 FAX. +1 714 542 0627 E-MAIL. info@ultratecusa.com

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